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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.         | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------------|------------------|
| 10/802,017   | 03/16/2004  | Alan S. Bitzer       | C-2812                      | 2810             |
| 7590 07/03/2006  |             |                      |                             |                  |
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|  |             |                      | EXAMINER<br>WALKER, KEITH D |                  |
|  |             |                      | ART UNIT<br>1745            | PAPER NUMBER     |

DATE MAILED: 07/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/802,017

Applicant(s)

BITZER ET AL.

Examiner

Keith Walker

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,3,6 and 7 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 2,3,6 and 7 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/25/06.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Remarks***

Claims 2, 3, 6 & 7 are pending examination.

### ***Information Disclosure Statement***

The information disclosure statement filed on 4/25/06 has been placed in the application file and the information referred to therein has been considered as to the merits.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6 & 7 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a remote-sense pressure regulator, does not reasonably provide enablement for any element that can incrementally increase and decrease the flow of reactant gas. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. The limitations are broader than the specification has provided as support.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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Claims 2 & 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are drawn to a product and have methods of operating or using the product, "incrementally increases and decreases the flow of reactant gas at said primary inlet in response to..." mixed in with the product claim. It is held that a single claim, which claims both an apparatus and the method steps of using the apparatus, is indefinite (MPEP 2173.05).

### ***Claims Interpretation***

Regarding Claims 2 & 3, the pressure regulator which "incrementally increases and decreases the flow of reactant gas at said primary inlet in response to..." is considered to be intended use and a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations (*MPEP* 2113). So while the limitation has been considered it is not given patentable weight.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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1. Claims 2, 3, 6 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Publication 2003/0022034 (Suzuki) in view of US Publication 2002/0136942 (Kashiwagi).

Suzuki teaches a fuel cell system containing a hydrogen supply, a variable regulator feeding a primary inlet to an ejector, which feeds the fuel cell and an exhaust line feeding the secondary ejector inlet. A controller controls the variable valve in response to pressure sensors before the fuel cell (Fig. 2, [0043-0048], [0053-0055]).

Suzuki does not teach the use of a blower in the fuel cell effluent line.

Kashiwagi teaches a fuel cell stack system fed by a hydrogen supply through a pressure control valve and an ejector. The ejector has two inlets for receiving pure fuel and effluent from the stack and an outlet for supplying the fuel cell stack. Anode effluent from the fuel cell stack is routed through a pump back to the ejector (Fig. 1, Abstract, [0018-0022]). The motivation to use a blower in the effluent line supplying the ejector is to improve the efficiency of the ejector and the supply system. When the flow rate is low, the ejector is not able to efficiently exert force on the effluent gas in the recirculation line. So the addition of the pump allows the supply of the recirculation gas to the ejector ([0004-0005]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Suzuki with the blower of Kashiwagi to improve the ejector's efficiency in low operating pressures.

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2. Claims 6 & 7 are rejected under 35 U.S.C. 102(b) as being anticipated by US Publication 2002/0136942 (Kashiwagi) in view of US Patent 3,748,180 (Clausi).

Kashiwagi teaches a fuel cell stack system fed by a hydrogen supply tank through a pressure control valve and an ejector. The ejector has two inlets for receiving pure fuel in the primary inlet and effluent from the stack in the secondary inlet and an outlet for supplying the fuel cell stack. Anode effluent from the fuel cell stack is routed through a pump back to the ejector (Fig. 1, Abstract, [0018-0022]).

Kashiwagi is silent to the use of a remote sense pressure regulator, which incrementally increases and decreases the flow of reactant gas.

Clausi teaches a pressure regulator that supplies reactant to an ejector and onto a fuel cell such that the hydrogen pressure is maintained at a constant pressure (Fig. 1, 2:50-70). A pressure regulator that maintains a constant pressure at the inlet of the fuel cell means it has to increase and decrease the flow of reactant gas depending on the rate of reactant gas used by the fuel cell. The motivation to use such a pressure regulator is to insure a constant supply of reactant gas and not starve the fuel cell when a load is imposed on the fuel cell.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the pressure control valve of Kashiwagi with the pressure regulator of Clausi to maintain a constant flow of reactants to the fuel cell so as not to starve the fuel cell of fuel.

### ***Response to Arguments***

Applicant's arguments filed 4/25/06 have been fully considered but they are not persuasive. Concerning the rejections of Claims 2 & 3 under USC 112, the language used appears to more than simply recite the function of the regulator, which might be along the lines of just increasing and decreasing the flow. The limitation goes toward describing the method in which the regulator is used in the operation of the apparatus.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a controller) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The controller and the functioning of the controller, as argued by applicant, are not limitations in the instant claims.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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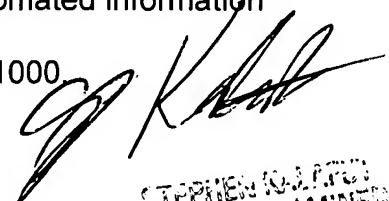
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KW



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